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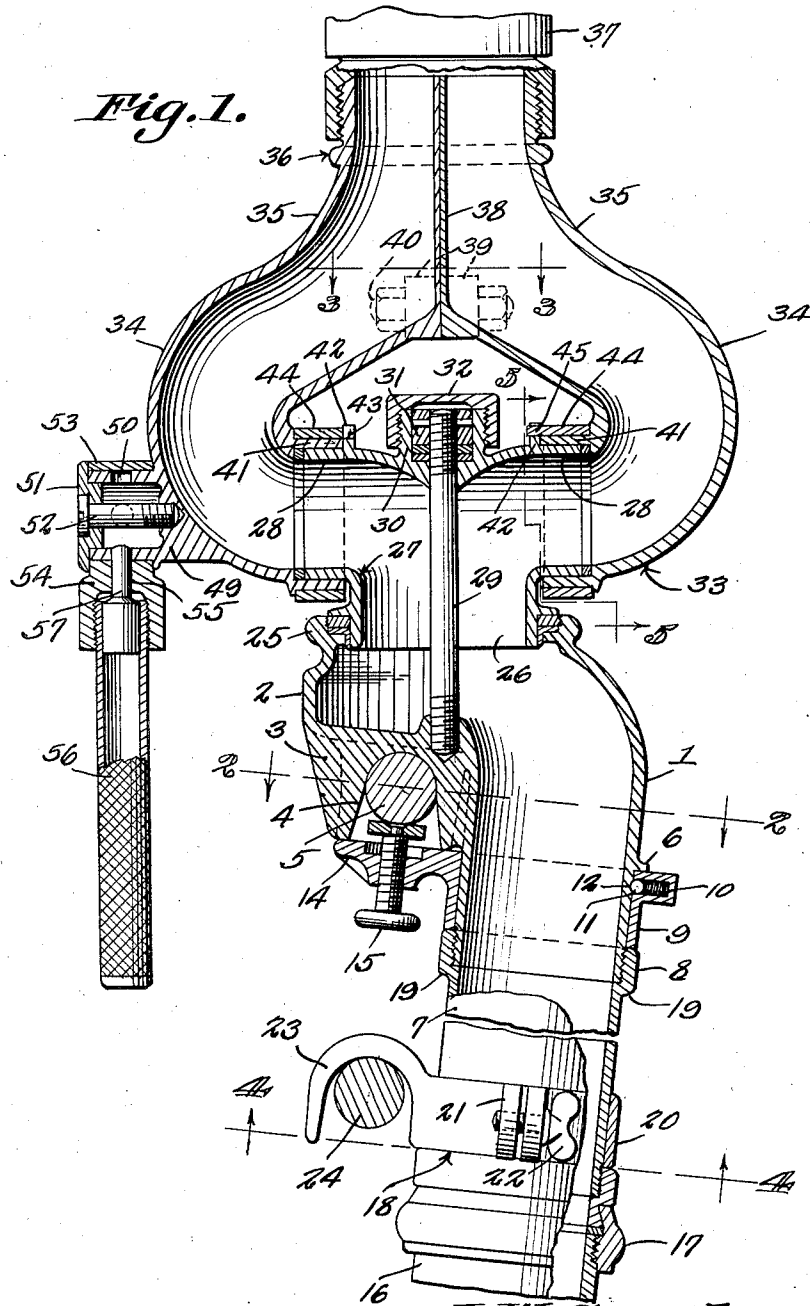
J. W. GRANT

2,227,779

LADDER PIPE

Filed June 27, 1940

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 2.

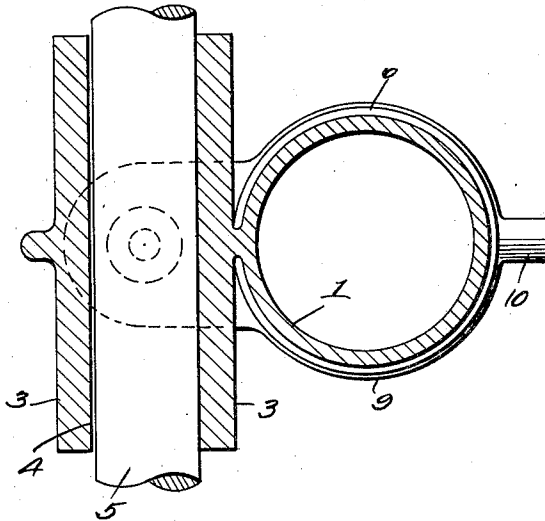


Fig. 3.

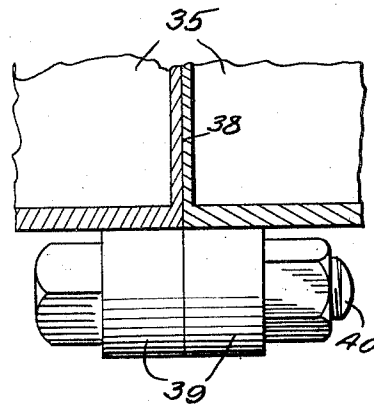


Fig. 4.

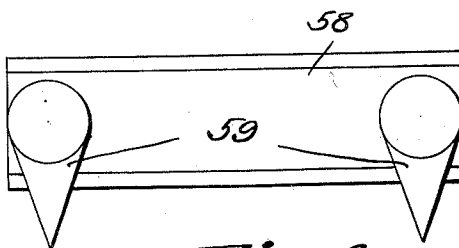
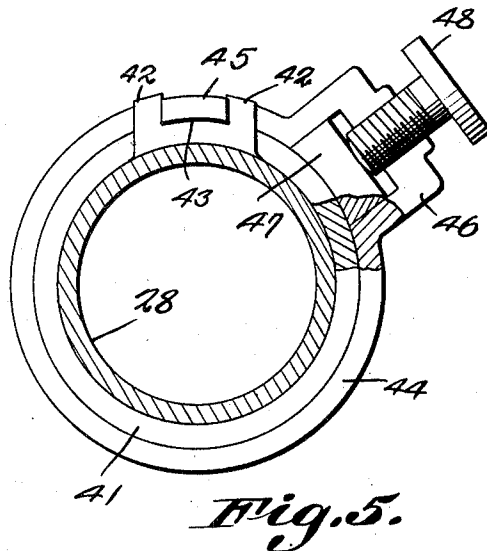
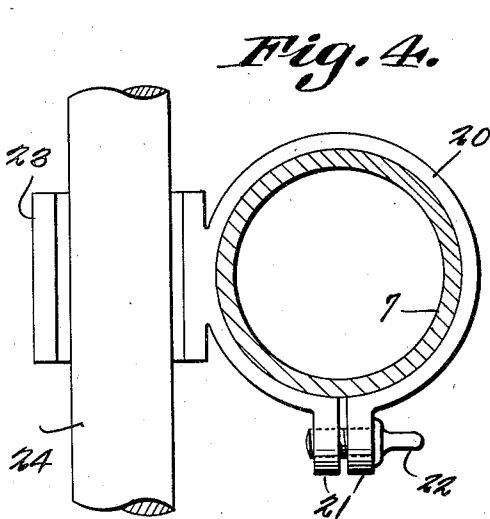


Fig. 6.

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UNITED STATES PATENT OFFICE

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LADDER PIPE

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Application June 27, 1940, Serial No. 342,781

4 Claims. (Cl. 299—73)

A tower is an unsatisfactory means for delivering water into a burning building, because there is a lack of human guidance in the delivery of the water, the water being poured promiscuously into an area that is under suspicion, rather than upon the specific locus of conflagration. A ladder on a truck, or an ordinary ground ladder, is superior to a tower, because several nozzles can be placed on a ladder, each nozzle being under the direct governance of an operator. The present invention aims to provide a novel, ladder-carried means for discharging a controlled stream of water in a variety of directions, a hit or miss delivery of water being avoided.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Fig. 1 shows, in longitudinal, vertical section, a device constructed in accordance with the invention;

Figs. 2, 3, 4 and 5 are sections taken, respectively, on the lines 2—2, 3—3, 4—4 and 5—5 of Fig. 1;

Fig. 6 is an elevation showing a modified mounting means.

The device forming the subject matter of this application comprises a substantially vertical tubular body 1, having an offset elbow 2. The elbow 2 carries a depending transverse foot 3, in which is formed a downwardly opening notch or seat 4, flared to accommodate a ladder rung 5.

At the level of the lower end of the foot 4, the body 1 is supplied with a circumferential rib 6. A tubular neck 7, of any desired length, is threaded on the lower end of the body 1, and the upper end of the neck defines a circumferential shoulder 8.

A ring 9 is mounted to turn on the body 1, between the rib 6 and the shoulder 8. The ring 9 is supplied with an outstanding housing 10, wherein a spring actuated ball latch 11 is mounted,

the latch being adapted to cooperate with a seat 12, in the body 1.

Opposite to the housing 10, the ring 9 is provided with an outstanding arm 14, into which is threaded a clamp or holder 15, adapted to exert pressure on the lower part of the ladder rung 5, to keep the ladder rung engaged in the seat 4 of the foot 3.

The ring 9 is rotated to the position of Fig. 1, the latch 11 engaging with the seat 12, the arm 14 being disposed beneath the ladder rung 5, and the clamp or holder 15 being advanced to bear upon the rung, as shown in Fig. 1 of the drawings.

The numeral 16 marks a hose, connected to the lower end of the neck 7 by a coupling mechanism 17, which has no patentable virtue in itself. Let it suffice to say that the upper member of the coupling mechanism 17 affords a circumferential shoulder 18 about the neck 7, the upper end of the neck being enlarged to define a circumferential shoulder 19.

A ring clamp 20 surrounds the neck 7, and has outstanding lugs 21, connected by a tightening screw 22. The ring clamp 20 is provided with an outstanding suspension element 23, preferably a downwardly opening hook, adapted to be seated on a lower ladder rung 24.

The ring clamp 20 is mounted to slide for adjustment, lengthwise of the neck 7, and, therefore, the hook 23 may be made to cooperate with the rung 24, regardless of the vertical distance between the rungs 5 and 24. Since the ring clamp 20 is mounted to rotate on the neck 7, the hook 23 may be brought readily above the rung 24, for downward sliding movement, into engagement therewith.

The elbow 2 of the body 1 is supplied at its upper end with an annular mouth 25, receiving for rotation, but against leakage, the depending shank 26 of a hollow T 27, the T including oppositely projecting, axially aligned lateral arms 28.

The lower end of a post 29 is fixed in the bottom part of the elbow 2 of the body 1. The post 29 extends upwardly through the shank 26 of the T 27, in axial relation thereto, and through the upper wall of the T, into an upstanding cup 30, wherewith the upper part of the T is provided. The upper portion of the post 29 is threaded into one of a plurality of washers 31 in the cup 30, and, thus, the T 27 and parts associated therewith, are held for rotation on the elbow, at the will of an operator, about an axis represented by the post 29. Some of the washers 31 are packing elements, preventing leakage about the post 29; and, further to prevent leakage, and to house the

washers 31, a cap 32 is threaded on the cup 30.

The numeral 33 in Fig. 1 serves to designate generally, a delivery member having laterally separable, outwardly curved arms 34, provided at their upper ends with elements 35, each of semicircular cross section, forming a discharge nipple 36, on which a nozzle 37 of any desired form is mounted. The inner walls 38 of the parts 35 which form the nipple 36, define a longitudinal baffle or division member in the nipple 36, serving to direct water from the outwardly curved arms 34 of the delivery member 33 into the nozzle 37. The nipple forming parts 35 have outstanding lugs 39, connected by bolts 40 and holding the parts of the delivery member together, and on the parts 28 of the T 27, in a way to be described hereinafter. It may be observed that but two of the bolts 40 are required to hold the parts of the delivery member 33 together, and the delivery member can be set up or taken down readily.

The curved arms 34 of the delivery member 33 are supplied with cuffs 41, mounted to turn, watertight, on the laterally projecting parts 28 of the T 27. The arms 28 of the T 27 are provided with upwardly projecting lugs 42, having seats or notches 43 in their upper ends.

Annular brake carriers 44 surround the cuffs 41 of the delivery member 33, and are disposed between the lugs 42 and the outer shoulders on the cuffs. One or both of the brake carriers 44 is supplied with an inwardly projecting tongue 45, engaged in the seat 43 of the lug 42. The brake carrier 44 is held against rotation, because the tongue 45 is engaged in the seat 43. The brake carrier 44 is supplied with an outwardly extended offset or guide 46, wherein a brake shoe 47 is mounted for radial sliding movement. The brake shoe 47 is advanced into engagement with the cuff 41 of the delivery member 33, by a screw 48 or the like, mounted in the offset 46.

The delivery member 33 can be swung about a substantially horizontal axis, represented by the axis of the arms 28 of the T 27. If a small amount of pressure is put on the brake shoe 47 by the screw 48, then the brake shoe will exercise the function which its name indicates, retarding the swinging movement of the delivery member 33. If the brake shoe 47 is advanced enough by the screw 48, then the delivery member 33 can be held securely in any position to which it may have been moved.

A means is provided whereby an operator can swing the delivery member 33 conveniently about a substantially horizontal axis or about a substantially vertical axis. Having that consideration in mind, one of the parts 34 is supplied with an outwardly projecting, hollow stud 49. The stud 49 has circumferentially spaced holes 50. A retaining cap 51 is held in the outer end of the stud 49 by a screw 52, passing through the cap and entering the base of the stud 49.

The part 51 is called a retainer, because it holds for rotation on the stud 49, a collar 53, carrying a radial socket 54, the socket having a reduced bore 55 in its base, adapted to be aligned with any of the holes 50 in the stud 49.

The numeral 56 designates a handle, provided with a reduced stem 57, adapted to pass through the bore 55 and enter any of the holes 50 in the stud 49. The handle 56 is threaded into the socket 54, and, thus, the handle is securely assembled with the part 34 that carries the stud 49. By means of the handle 56, the entire delivery member 33 can be swung about a horizontal axis

or a vertical axis. If the operator wishes the handle 56 to project otherwise than as shown in Fig. 1, the stem 57 can be inserted into the selected hole 50, as the handle 56 is threaded into the socket 54.

As to general operation, so far as mounting is concerned, the ladder rung 5 is received in the seat 4 of the foot 3. The ring 9 is turned to bring the arm 14 under the rung 5. The holder 15 is advanced until it bears on the rung 5.

The screw 22 is slacked away. The ring clamp 20 is rotated until the hook 23 is above the rung 24. The ring clamp 20 is slid lengthwise of the neck 7 until the hook 23 is engaged with the rung 24. Then the screw 22 is operated to hold the ring 20 tight on the neck 7.

Water proceeds through the hose 16, the neck 7, the tubular body 1 and its elbow 2. The water enters the shank 26 of the T 27 and flows laterally through the branches 28 of the T, the water following through the curved arms 34 of the delivery member 3, until the water reaches the baffle formed by the walls 38, the water being directed into the nozzle 37.

By means of the handle 56, the delivery member 33 can be rotated about an axis (substantially horizontal) coincident with the axes of the arms 28 of the T 27. The delivery member 33, moreover, can be rotated about a substantially vertical axis represented by the post 29.

The general construction is such that, without the use of a tower, and through the instrumentality of a ladder, either a ladder on a truck or a ground ladder, a stream of water can be directed into a burning building at a point desired, rather than at random.

Much of the mechanism hereinbefore described can be used otherwise than on a ladder. If the operator wishes, he can take off the ring 9 of Fig. 1 and all parts below it. Then, the lower end of the body 1 can be threaded into a block 53 shown in Fig. 6, instead of into the upper part of the neck 7 as in Fig. 1. The foot block 53 is supplied with spurs 59 which keep it from sliding about due to the kick of the water which is being discharged.

Owing to the provision of the offset elbow 2, and because the discharge nipple 36 is in substantially vertical alignment with the foot 3 and the seat 4, the downward thrust of the flowing water will have a minimum tendency to rotate the device about a horizontal axis represented by the rung 5.

Having thus described the invention, what is claimed is:

1. In a fire fighting apparatus, a tubular body provided at its upper end with a fixed transversely offset elbow, means for supporting the body in an approximately vertical position, a T comprising a depending tubular shank journaled on the top of the elbow for rotation about a substantially vertical axis, the T including lateral branches a post extended through the shank of the T coaxially therewith, and having its lower end mounted in the bottom of the elbow, means for engaging the upper end of the post with the top of the T to hold the T for rotation about said axis, and a delivery member comprising oppositely and outwardly curved arms terminating in inwardly projecting cuffs journaled on the arms of the T and mounting the delivery member for swinging movement about a substantially horizontal axis.

2. A fire fighting apparatus, constructed as set forth in claim 1, and wherein one arm of the

delivery member is provided with an outstanding stud disposed in substantially coaxial relation with respect to the arms of the T, a handle having a free outer end, and having its inner end mounted 5 on the stud for swinging adjustment in a direction substantially parallel to the longitudinal axis of the body, and means for holding the handle in adjusted positions circumferentially of the stud, to facilitate rotation of the delivery member about 10 either of said axes.

3. In a fire fighting apparatus, a substantially vertical tubular body including a neck, the body being provided at its upper end with a laterally offset elbow having an outlet in its top, the offset 15 being provided with a downwardly opening ladder rung seat, a ring circumferentially adjustable on the body, an upwardly acting rung clamp carried by the ring and disposed below the seat, a ring

clamp having an element for engagement with another rung, the ring clamp being adjustable lengthwise of the neck and circumferentially thereof, and means for holding the ring clamp in adjusted positions, circumferentially of the nozzle 5 and longitudinally thereof.

4. In a fire fighting apparatus, a T having laterally extended arms, one of which is provided with a seat, a discharge member comprising inwardly projecting cuffs journaled on the arms, 10 a brake carrier surrounding one cuff and having a tongue received in the seat, to hold the brake carrier against rotation, a brake shoe mounted to move in the brake carrier, and means on the brake carrier for advancing the brake shoe into 15 engagement with the cuff.

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